

REMARKS

The Applicants respectfully request further examination and consideration in view of the amendments above and the arguments set forth fully below. Claims 1-40 were previously pending in this application. Within the previous Office Action, Claims 1-40 have been rejected. By the above amendments, new Claims 41 and 42 have been added. Accordingly, Claims 1-42 are currently pending.

Rejections Under 35 U.S.C. § 103

Within the previous Office Action, Claims 1-4, 6-11, 13-17, 19-23, 25-27, 29-34 and 36-40 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over U.S. Patent Application Publication No. 2002/0194309 to Carter (hereinafter “Carter”). Applicants respectfully disagree.

Carter teaches a system and method for synchronizing a multiplicity of devices in a multimedia environment which includes a multimedia device, a multimedia database, a portable multimedia player, a personal computer and a master digital multimedia device. [Carter, Figure 1] The multimedia database is an online collection of audio and video works. [Carter, ¶ 28] The recorded multimedia works are able to be *categorized* by format. [Carter, ¶ 28] The multimedia environment also includes a control unit which provides a means to select and play a multimedia work via keys and commands for operations such as start, stop, skip, repeat, shuffle and save, and a display to display information about a selected work. [Carter, ¶ 30] A user is able to *select* desired multimedia works to be synchronized and downloaded for storage on a digital multimedia device from the music multimedia database. [Carter, ¶ 31] However, Carter does not teach a *content directory service* to browse the content data stored in the database and to provide information regarding the content data stored in the database and to maintain directory information related to new content received. Carter also does not teach an *interface layer* coupled to communicate with the synchronization application and the content directory service to provide update information to the content directory service regarding new content data received by the database from the external device during the content data synchronization. Similarly, Carter does not teach the methods of *synchronizing* data as claimed herein.

In contrast to the teachings of Carter, the presently claimed invention is directed towards a content directory and synchronization bridge. A first media server is coupled to one or more devices. The first media server includes a database to store content. The first media server also

includes a Content Directory Service (CDS), a synchronization application, and a synchronization-CDS bridge. The synchronization-CDS bridge acts as an interface layer between the synchronization application and the CDS. The synchronization application provides data synchronization communications using one or more conventional synchronization protocols.

As is well known in the art, CDS is a service that is compliant with UPnP architecture. A UPnP network device uses the UPnP CDS to compile detailed information about each content item on the UPnP network device. Each content item that is referenced by the CDS includes various information about the content item including the transfer protocol(s) and file format(s) that the UPnP network device storing the content item can use to transfer the content item to another UPnP network device. [Present Specification, page 4, line 30 through page 5, line 2]

The synchronization application of the claimed invention enables a data synchronization process between the first media server and a web site, a remote media server, a PDA or another device. During the data synchronization process, new content is received from the remote media server by the first media server, and the new content is stored in the database within the first media server. As the new content is received by the database, the synchronization application keeps a record of the new content received. The synchronization-CDS bridge searches the synchronization application for any newly added content sent to the database. *Information* related to any new content discovered by the synchronization-CDS bridge is *sent* by the synchronization-CDS bridge to the CDS as *update information*. The CDS is updated according to the update information received from the synchronization-CDS bridge, so that the CDS accurately reflects all content in the database, including the newly added content, subsequent to the data synchronization. [Present Specification, page 11, line 6 through page 12, line 4] Once updated, the CDS includes *directory information* related to the *new content* received. [Present Specification, page 14, lines 5-6] Data synchronization between the first media server and the web site, and between the first media server and the PDA or other device is performed in a similar manner as described above. [Present Specification, page 12, lines 5-6] Carter does not teach a content directory service to browse the content data stored in the database and to provide *information* regarding the content data stored in the database and to maintain *directory information* related to *new content* received. Carter also does not teach an *interface layer* coupled to communicate with the synchronization application and the content directory service to provide *update information* to the content directory service regarding *new content* data received by the database from the external device during the content data synchronization. Carter does not teach the methods of synchronizing data as claimed herein.

On pages 3-4 of the Office Action, it is argued that Carter teaches the content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database. The Applicants respectfully disagree. Carter specifically teaches that

Multimedia database 106 is an online collection of audio and video works which may [be] accessed by network devices on a subscription or free file share basis. The recorded multimedia works may be categorized as to format, such as classical, jazz, contemporary, classic rock, etc. and video works such as, educational, drama, comedy, etc. The digital source database translates and stores the audio and video works in digital form, with the works subdivided into different formats. The content source database is further capable of communication with other network devices to deliver the data stored in the database to a digital player device, personal computer or microprocessor, or portable personal digital player. [Carter, ¶ 0028]

FIG. 4 is a flowchart depicting one embodiment of the present invention. The digital multimedia device 104 allows the user, via the control unit 314 means, to request and download entirely new recorded data into the digital multimedia device 104 or program the digital multimedia device 104 to synchronize and update the user's audio/video files automatically from a multimedia database 106, a personal computer or other devices connected to the network. For example, the user instructs the digital multimedia device to establish network contact with a selected multimedia database in the required communicating manner (Step 402). The user then selects the desired multimedia works to be synchronized and downloaded for storage on the digital multimedia device from the music multimedia database (Step 404). The selected digital data is downloaded from the music multimedia database into the data storage memory unit of the digital multimedia device (Step 406). The user may then be prompted to select other content for download. If the user desires to download more content, the process is repeated (Step 408). If the user declines to download or update content, the session is terminated. As a result, the user may listen to entirely different audio/video selections from those previously recorded in the digital multimedia device. [Carter, ¶ 0031]

Nowhere in these cited sections does Carter teach a *content directory service* to browse content data stored in the database and to provide information regarding the content data stored in the database. Even if the multimedia database and the control unit could be somehow considered to be a *content directory service*, it does not maintain *directory information* related to *new content* received.

On pages 4-5 of the Office Action, it is argued that Carter teaches an interface layer to provide the update information and updating the content directory service is inherently taught in Carter. Again, the Applicants respectfully disagree. Carter does not teach an interface layer as taught and claimed within the present application. Within the Office Action it is stated that the interface layer is interpreted as a functional layer to provide interface between the content directory service and the synchronization application. However, the interface layer of the

presently claimed invention is not just a functional layer but is also a physical layer coupled to the content directory service and the synchronization application, as illustrated in Fig. 4.

As taught within the Present Specification,

A protocol according to the present invention is illustrated in Figure 4. An interface layer 260 is *coupled to* a synchronization application 270 to provide synchronization communications between two network devices, preferably two media servers. The interface layer 260 is also *coupled to* communicate with a content directory service (CDS) 250. [Present Specification, page 13, lines 1-4, emphasis added]

In operation, the interface layer of the present invention *acts as a bridge* between a synchronization application and a content directory service. When new content is added to a first media server, the content directory service associated with the first media server is automatically updated to reflect the addition of the newly added content. However, a synchronization application on the first media server needs to be updated whenever new content is added to the first media server, independent of a data synchronization, so that during a subsequent data synchronization, the synchronization application knows what content on the first media server has been added since the previous data synchronization. Knowing what content has been added enables the synchronization application to properly provide the newly added content to a second media server during the subsequent data synchronization. The interface layer *discovers* the newly added content on the content directory service and *provides* this information to the synchronization protocol.

Similarly, during data synchronization between the first media server and the second media server, the synchronization application tracks any new content that is provided by the second media server to the first media server. When new content is added in this manner, the content directory service of the first media device needs to be updated to accurately reflect all content stored on the first media server, including the newly added content from the data synchronization. The interface layer of the present invention *discovers* the newly added content from the synchronization application and *provides* this update information to the content directory service. Once the content directory service receives and incorporates the update information, the content directory service accurately provides content information to a user browsing the first media server. [Present Specification, page 15, lines 3-24, emphasis added]

Carter does not teach an interface layer, such as this that *discovers newly added content and provides this information* to the synchronization protocol **and** to the content directory service.

The independent Claim 1 is directed to a media server. The media server of Claim 1 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content data* and provide *update information* to the content directory

service regarding the *new content data* received by the database from the external device during the content data synchronization. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content data* and provide *update information* to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization. For at least these reasons, the independent Claim 1 is allowable over the teachings of Carter.

Claims 2-4, 6 and 7 are dependent on the independent Claim 1. As discussed above, the independent Claim 1 is allowable over Carter. Accordingly, Claims 2-4, 6 and 7 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 8 is directed to a media server. The media server of Claim 8 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* added to the database and provide *update information* to the synchronization application regarding the *new content* added to the database, wherein the *new content data* is synchronized with the external device during a next content data synchronization. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* added to the database and provide *update information* to the synchronization application regarding the *new content* added to the database, wherein the *new content data* is synchronized with the external device during a next content data synchronization. For at least these reasons, the independent Claim 8 is allowable over the teachings of Carter.

Claims 9-11, 13 and 14 are dependent on the independent Claim 8. As discussed above, the independent Claim 8 is allowable over Carter. Accordingly, Claims 9-11, 13 and 14 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 15 is directed to a media server. The media server of Claim 15 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* data received by the database and provide *first update information* to the content directory service regarding the new content data received by the database from the external device during the content data synchronization, and to provide second update information to the synchronization application regarding the new content data added to the database, wherein the new content data is synchronized with the external device during a next content data synchronization. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content data* received by the database and provide *first update information* to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization, and to provide second update information to the synchronization application regarding the new content data added to the database, wherein the new content data is synchronized with the external device during a next content data synchronization. For at least these reasons, the independent Claim 15 is allowable over the teachings of Carter.

Claims 16, 17, 19 and 20 are dependent on the independent Claim 15. As discussed above, the independent Claim 15 is allowable over Carter. Accordingly, Claims 16, 17, 19 and 20 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 21 is directed to a network of devices. The network of devices of Claim 21 comprises a network device, a first media server coupled to the network device, the first media server including a database to store content data, a synchronization application to perform content data synchronization with the network device, a content directory service to

browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* data received by the database and provide *first update information* to the content directory service regarding the new content data received by the database from the network device during content data synchronization, and to provide second update information to the synchronization application regarding the new content data added to the database, wherein the *new content data* is synchronized with the network device during a next content data synchronization. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* data received by the database and provide *first update information* to the content directory service regarding the new content data received by the database from the network device during content data synchronization, and to provide second update information to the synchronization application regarding the *new content data* added to the database, wherein the new content data is synchronized with the network device during a next content data synchronization. For at least these reasons, the independent Claim 21 is allowable over the teachings of Carter.

Claims 22, 23, 25 and 26 are dependent on the independent Claim 21. As discussed above, the independent Claim 21 is allowable over Carter. Accordingly, Claims 22, 23, 25 and 26 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 27 is directed to a method of synchronizing data between two network devices. The method of Claim 27 comprises sending first update information to a content directory service from an interface layer regarding a first new content data received by a first media device from a second media device during content data synchronization performed by a synchronization application, thereby *maintaining* by the content directory service directory *information related to the first new content data* received, and sending second update information to the synchronization application from the interface layer *regarding a second new content* added to the first media device, wherein the second new content data is synchronized with the second media device during a next content data synchronization. As described above, Carter does not teach sending first update information to a content directory service from an

interface layer *regarding a first new content data* received by a first media device from a second media device during content data synchronization performed by a synchronization application, thereby *maintaining* by the content directory service directory information related to the *first new content data* received. As further described above, Carter does not teach sending second update information to the synchronization application from the interface layer regarding a *second new content* added to the first media device, wherein the second new content data is synchronized with the second media device during a next content data synchronization. For at least these reasons, the independent Claim 27 is allowable over the teachings of Carter.

Claims 29-31 are dependent on the independent Claim 27. As discussed above, the independent Claim 27 is allowable over Carter. Accordingly, Claims 29-31 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 32 is directed to a method of synchronizing data between two network devices. The method of Claim 32 comprises performing data synchronization between a first media server and a second media server, receiving content data related to the data synchronization on the first media server, obtaining *update information* related to the *received content data* from a synchronization application on the first media server, *providing the update information* to a content directory service of the first media server and updating the content directory service according to the update information, thereby *maintaining* by the content directory service directory information related to the *received content data*. As described above, Carter does not teach *providing the update information* to a content directory service of the first media server. As further described above, Carter does not teach updating the content directory service according to the update information, thereby *maintaining* by the content directory service directory information related to the received content data. For at least these reasons, the independent Claim 32 is allowable over the teachings of Carter.

Claims 33, 34, 36 and 37 are dependent on the independent Claim 32. As discussed above, the independent Claim 32 is allowable over Carter. Accordingly, Claims 33, 34, 36 and 37 are all also allowable as being dependent upon an allowable base claim.

The independent Claim 38 is directed to an apparatus for synchronizing data between two network devices. The apparatus of Claim 38 comprises means for performing data synchronization between a first media server and a second media server, means for receiving content data related to the data synchronization on the first media server, means for obtaining *update information* related to the *received content data* from a synchronization application on the first media server, means for providing the update information to a content directory service of

the first media server and means for *updating the content directory service* according to the *update information*, wherein the content directory service *maintains directory information* related to the *received content data*. As described above, Carter does not teach means for *providing the update information* to a content directory service of the first media server. As further described above, Carter does not teach means for *updating the content directory service* according to the *update information*, wherein the content directory service *maintains directory information* related to the *received content data*. For at least these reasons, the independent Claim 38 is allowable over the teachings of Carter.

The independent Claim 39 is directed to a media server. The media server of Claim 39 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to automatically provide update information to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization without user intervention. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to automatically provide update information to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization without user intervention. For at least these reasons, the independent Claim 39 is allowable over the teachings of Carter.

The independent Claim 40 is directed to a media server. The media server of Claim 39 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to automatically provide first update information to the content directory service regarding the *new content data* received by the database from the external device during the

content data synchronization **without user intervention**, and to **automatically** provide second update information to the synchronization application regarding the new content data added to the database **without user intervention**, wherein the new content data is synchronized with the external device during a next content data synchronization. As described above, Carter does not teach a content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to maintain directory information related to new content received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to **automatically** provide first update information to the content directory service regarding the new content data received by the database from the external device during the content data synchronization **without user intervention**, and to **automatically** provide second update information to the synchronization application regarding the new content data added to the database **without user intervention**, wherein the new content data is synchronized with the external device during a next content data synchronization. For at least these reasons, the independent Claim 40 is allowable over the teachings of Carter.

Rejection of Claims Under 35 U.S.C. § 103

Within the Office Action, Claims 5, 12, 18, 24, 28 and 35 have been rejected under 35 U.S.C. § 103(a) as being unpatentable over Carter in view of U.S. Patent No. 6,892,230 to Gu et al. (hereinafter Gu). Applicants respectfully disagree.

Claim 5 is dependent on the independent Claim 1. Claim 12 is dependent on the independent Claim 8. Claim 18 is dependent on the independent Claim 15. Claim 24 is dependent on the independent Claim 21. Claim 28 is dependent on the independent Claim 27. Claim 35 is dependent on the independent Claim 32. As discussed above, the independent Claims 1, 8, 15, 21, 27 and 32 are all allowable over the teachings of Carter. Accordingly, Claims 5, 12, 18, 24, 28 and 35 are all also allowable as being dependent on an allowable base claim.

New Claims

By the amendments, new Claims 41 and 42 have been added. The independent Claim 41 is directed to a Universal Plug and Play enabled media server. The Universal Plug and Play media server of Claim 41 comprises a database to store content data, a synchronization

application to perform content data synchronization with an external device, a Universal Plug and Play content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content data* and provide *update information* to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization, wherein the interface layer provides the update information to the synchronization application regarding the new content data added to the database, the new content data to be synchronized with the external device during a next content data synchronization. As described above and recognized within the previous Office Action, Carter does not teach a Universal Plug and Play content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content data* and provide *update information* to the content directory service regarding the *new content data* received by the database from the external device during the content data synchronization. For at least these reasons, the new independent Claim 41 is allowable over the teachings of Carter.

The independent Claim 42 is directed to a Universal Plug and Play enabled media server. The Universal Plug and Play enabled media server of Claim 42 comprises a database to store content data, a synchronization application to perform content data synchronization with an external device, a Universal Plug and Play content directory service to browse the content data stored in the database and to provide information regarding the content data stored in the database and to *maintain directory information* related to *new content* received, and an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* added to the database and provide *update information* to the synchronization application regarding the *new content* added to the database, wherein the *new content data* is synchronized with the external device during a next content data synchronization, further wherein the interface layer provides the update information to the content directory service regarding the new content data received by the database from the external device during content data synchronization. As described above and recognized within the previous Office Action, Carter does not teach a Universal Plug and Play content directory service to browse the content data stored in the database and to provide information regarding the content data stored

in the database and to *maintain directory information* related to *new content* received. As further described above, Carter does not teach an interface layer coupled to communicate with the synchronization application and the content directory service to *discover the new content* added to the database and provide *update information* to the synchronization application regarding the *new content* added to the database, wherein the *new content data* is synchronized with the external device during a next content data synchronization. For at least these reasons, the new independent Claim 42 is allowable over the teachings of Carter.

For at least the reasons given above, the Applicants respectfully submit that the claims are in a condition for allowance, and allowance at an early date would be appreciated. Should the Examiner have any questions or comments, they are encouraged to call the undersigned at (408) 530-9700 to discuss the same so that any outstanding issues can be expeditiously resolved.

Respectfully submitted,
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